

## **TROPICAL RAINFALL MEASURING MISSION**

**November 29, 1999 - December 5, 1999**

**DOY 333 - 339**

**Day of Mission 732 - 738**

### **TRMM MISSION OPERATIONS**

- TRMM is flying in the -X Forward direction as of 99-313, at 21:42:52z.
- The next Yaw maneuver is scheduled for December 10th (99-344).
- Delta-V maneuver #145 is scheduled for December 9th (99-343) using the ISP thrusters.
- The Beta angle range for 99-340 to 346 is  $-20.0^{\circ}$  to  $5.4^{\circ}$ .

### **TRMM SUBSYSTEM OPERATIONS**

#### **Attitude Control System (ACS)**

Delta-V maneuver #143 was successfully conducted on 99-335 at 16:14:42z and 17:00:26z, for durations of 34.500 and 26.000 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 33.3% and 32.2% (66.7% and 67.8% on time). The remaining fuel is 658.559 kg, and the final apogee and perigee height is 354.87 km x 347.44 km.

Delta-V maneuver #144 was successfully conducted on 99-339 at 16:08:20z and 16:54:14z, for durations of 52.125 and 23.625 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 36.45% and 33.86% (63.55% and 66.14% on time). The remaining fuel is 656.794 kg, and the final apogee and perigee height is 354.85 km x 347.56 km.

The ESA experienced Sun interference in quadrants 1 and 3 from 99-333 to 99-336. It also experienced Moon interference in quadrants 1 and 3 from 99-336 through 99-338. ACS performed nominally during the transitions between 3 and 4 head control.

#### **Flight Data System (FDS)/Command & Data Handling (C&DH)**

The frequency standard continues to drift in the negative direction. The frequency remains x77D with a current drift rate of  $-0.95 \mu\text{s/hr}$ . The UTCF remains at 31535996.854485 sec with a current drift value of  $-186 \mu\text{s}$ .

Q-Channel restarts occurred on 99-333 at 07:05:30z, 99-335 at 04:38:37z, and 99-336 at 01:01:00z and 03:16:00z.

An EDAC multi-bit error occurred on 99-335 at 14:49:29z.

#### **Reaction Control Subsystem (RCS)**

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

### **Power Subsystem**

The Power subsystem is operating nominally.

### **Electrical Subsystem**

The Electrical subsystem operated nominally during this period.

### **Thermal Subsystem**

The Thermal subsystem operated nominally during this period.

### **Deployables Subsystem**

The Deployables subsystem performed nominally during this period.

### **RF/Communications Subsystem**

The RF/Communications subsystem performed nominally during this period.

## **SPACECRAFT INSTRUMENTS**

### **CERES**

The CCR which involves creating and testing TSMs to monitor the CERES current is expected to be closed out by the end of the year. A walk-through is being planned in December for the removal of CERES from load-shed plan and the test results.

Currently plans are to resume operations once the TERRA spacecraft has completed checkout in January 2000. There are no plans to manually remove power from the instrument once operations have resumed.

### **LIS**

LIS performed nominally during this time period. The Heater Auto Select remains disabled pending further MSFC analysis.

### **PR**

PR performed nominally during this time period. The list of Internal Calibration times over Australia in which PR was not radiating is listed below:

1999/333:15:59:51 - 16:02:04z  
1999/334:08:20:27 - 08:22:26z  
1999/334:16:22:44 - 16:24:52z  
1999/335:15:10:56 - 15:13:07z

1999/336:07:29:38 - 07:33:48z  
1999/336:15:33:52 - 15:35:58z  
1999/337:14:22:27 - 14:24:38z  
1999/338:06:40:15 - 06:45:20z  
1999/338:13:10:51 - 13:13:04z  
1999/339:13:33:10 - 13:35:18z

## **TMI**

TMI performed nominally during this time period.

## **VIRS**

VIRS performed nominally during this time period.  
Outgassing of the VIRS instrument is planned for next week.

## **GROUND SYSTEM**

The new release 8.1 was delivered to String 3 on November 22. It is awaiting testing and final system cleanup. String 2 remains the prime Mission Planning string. Testing of release 8.1 will be conducted during the week of December 6th by the FOT; and system cleanup will be the following week.

## **Event Reports**

No new Event Reports were opened during this week.

## **Generic Late Acquisition Reports (for TTRs 19639)**

No new Late Acquisition Reports were opened during this week.

## **New Anomaly**

No new Anomaly Reports were opened during this week.

## **Recurring Open Anomalies**

No recurring anomalies were seen during this period.

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